SUMMARY

OF

COMBINED DRAFT EIA / EMP REPORT

FOR

GARNET SAND DEPOSIT MINES

G.O.No.	43	69	70	71	57
Proponent	Riverways Mines and Minerals Ltd.				SS Minerals
Extent	4.75.5 Ha	4.90.0	4.75.0	4.80.0	4.75.0
Location	S.F.No – 390()P, Kottathur Village, Musiri Taluk, Trichy District, Tamil Nadu				
Land Type	Eri Poramboke Land				
Lease period	Valid upto 05.04.2038				
MineableROM Reserves (T)	28800	20736	29700	42048	36000
Peak ROM Production- T	9000	6912	9750	13814	10800
Ultimate Depth	2m	2m	2m	2m	2m
Mining Method	Opencast manual mining method using spades axes & baskets, loading it in to trucks/tippers for transportation. No drilling and blasting involved				
Baseline Studies	Post monsoon Season 2024 (October 2024 to December 2024)				

PROJECT PROPONENTS

Tvl. Riverways Mines and Minerals Ltd , Chennai.	Tvl. S.S.Minerals Chennai

CREATIVE ENGINEERS & CONSULTANTS

NABET ACCREDITED CONSULTANCY, NABL ACCREDITED TESTING LAB

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Sector 1(a)
Category B1

MAY 2025

SUMMARY

1.1 INTRODUCTION:

The purpose of the report is to obtain environmental clearance for the proposed 5 nos of Garnet Sand Deposit Mines of Tvl.Riverways Mines and Minerals Ltd (4 nos) and Tvl.S.S.Minerals (1no) located in Kottathur village, Musiri taluk, Trichy district, Tamil Nadu . Tvl.Riverways Mines and Minerals Ltd & Tvl.S.S.Minerals are associated companies with the same promoters & the 5 quarry leases are located within 500m radius. The leases details are given below:

S.No	Name of lease	Location	Extent	Status of leases
1	GO 43	S.F.No.390(P) – Eri porambokе land, Kottathur village, Musiri taluk, Trichy district, Tamil Nadu.	4.75.5	Fresh lease
2	GO 69		4.90.0	
3	GO 70		4.75.0	
4	GO 71		4.80.0	
5	GO 57		4.75.0	

Since this is a Garnet sand mining project which is a major mineral, this project falls under Sector 1(a) i.e.; Mining of Minerals under Category B1 and as per MoEF & CC notification, this proposal necessitates preparation of EIA/EMP report along with public hearing.

Since all the 5 leases belong to 2 associate companies of the same promoters and are in cluster situation within 500m radius, a combined EIA report is prepared based on standard and additional Terms of Reference issued by SEIAA, Tamil Nadu and is in conformance of the generic structure prescribed by MOEF&CC and approved mining plan.

Salient details of the EIA/ EMP report prepared for the project is provided below:

2.1 SALIENT DETAILS OF THE PROJECT:

	Tvl.Riverways Mines and Minerals Ltd				Tvl.S.S.Minerals
A.Statutory Clearances					
Project Name	**G.O.Ms.No.43**	**G.O.Ms.No.69**	**G.O.Ms.No.70**	**G.O.Ms.No.57**	**G.O.Ms.No.71**
Precise area G.O	G.O.3D No.43 dated 27.09.2010	G.O.3D No.69 dated 27.12.2010	G.O.3D No.70 dated 29.12.2010	G.O.3D No.57 dated 03.11.2010	G.O.3D No.71 dated 29.12.2010
Lease Execution	06.04.2018 valid upto 05.04.2038	06.04.2018 valid upto 05.04.2038	06.04.2018 valid upto 05.04.2038	06.04.2018 valid upto 05.04.2038	06.04.2018 valid upto 05.04.2038

Review of mining plan for the period 2023 -2024 to 2027-2028 Approved by IBM	vide letter No TN/TCR/GNT/ROMP-1761.MDS dated 01.08.2024	approved by IBM vide letter No TN/TCR/GNT/ROMP-1759.MDS dated 01.08.2024	approved by IBM vide letter No TN/TCR/GNT/ROMP-1760.MDS dated 20.08.2024	approved by IBM vide letter No TN/TCR/GNT/ROMP-1763.MDS dated 14.08.2024	vide letter No TN/TCR/GNT/ROMP-1758.MDS dated 22.08.2024
500m radius letter	Rc.No.217/2002/Mines dated 13.04.2018	Rc.No.221/2002/Mines dated 13.04.2018	Rc.No.223/2002/Mines dated 13.04.2018	Rc.No.214/2002/ Mines dated 13.04.2018	Rc.No.225/2002/Mines dated 13.04.2018
Rev. PWD Letter	K.No./V.B/V-1/K-76/2019 dated 18.02.2019	K.No./V.B/V-1/K-76/2019 dated 18.02.2019	K.No./V.B/V-1/K-76/2019 dated 18.02.2019	K.No./V.B/V-1/K-76/2019 dated 18.02.2019	K.No./V.B/V-1/K-76/2019 dated 18.02.2019
Letter from Industries Department*	G.O.3D No.05 dated 01.03.2023	G.O.3D No.07 dated 02.03.2023	G.O.3D No.08 dated 02.03.2023	G.O.3D No.10 dated 02.03.2023	G.O.3D No.06 dated 01.03.2023

B. Application for Environmental Clearance					
Particulars	**G.O.Ms.No.43**	**G.O.Ms.No.69**	**G.O.Ms.No.70**	**G.O.Ms.No.71**	**G.O.Ms.No.57**
Proposal no	11809522461	522482	522638	522487	523816
File no	11809	11810	11811	11812	11834
Terms of Reference	SEIAATN/F/No.6507/SEAC/ToR-1487/ 2023 dt 22.06.2023.	SEIAA-TN/F/No.6508/SEAC/ ToR-1497/2023 dtd 22.06.2023	SEIAA-TN/F/No.6510/SEAC/ ToR-1490/2023 dt 22.06.2023	SEIAA-TN/F/No.6511/SEAC /ToR-1478/2023 dtd 22.06.2023.	SEIAA-TN/F/No.6509/SEAC/ToR-1493/2023 dt 22.06.2023.
Amendment in TOR	TO25B108TN5433895A dt.07.04.2025	TO25B108TN5433895A dt.07.04.2025	TO25B108TN5433895A dt.07.04.2025	TO25B108TN5433895A dt.07.04.2025	TO25B108TN5433895A dt.07.04.2025
Baseline Data Collection	Post monsoon season Oct-Dec-2024	Post monsoon season Oct-Dec-2024	Post monsoon season Oct-Dec-2024	Post monsoon season Oct-Dec-2024	Post monsoon season Oct-Dec-2024

C. Site Details					
Project Name	**G.O.Ms.No.43**	**G.O.Ms.No.69**	**G.O.Ms.No.70**	**G.O.Ms.No.71**	**G.O.Ms.No.57**
Location	SF.No.390 (P) – Eri poramboke land, Kottathur village, Thuraiyur taluk, Trichy district, Tamil Nadu.				
Latitude	11°05'52.06"N to 11°06'02.77"N	11°06’05.43’’N to 11°06’13.93’’N	11°06'01.10"N to 11°06'12.76"N	11°05’54.19’’N to 11°06’01.55’’N	11°06'14.43"N to 11°06'20.99"N
Longitude	78°39'56.71"E to 78°40'02.72"E	78°39’49.60’’E to 78°39’57.51’’E	78°40'05.95"E to 78°40'11.95"E	78°39’46.44’’E to 78°39’54.69’’E	78°39' 54.80"E to 78°40'05.89"E
Nearest Town	Thuraiyur – 7.9km - NW	Thuraiyur – 7.5km - NW	Thuraiyur – 8.0km - NW	Thuraiyur – 7.7km - NW	Thuraiyur – 7.5km - NW
Nearest Highway	SH-142- 5.4Km-N	SH-142- 5.0Km-N	SH-142- 5.3Km-N	SH-142- 5.0Km-N	SH-142- 4.9Km-N
Nearest Railway Station	Uthamar kovil – 25km South, Trichy RS – 33km – S				

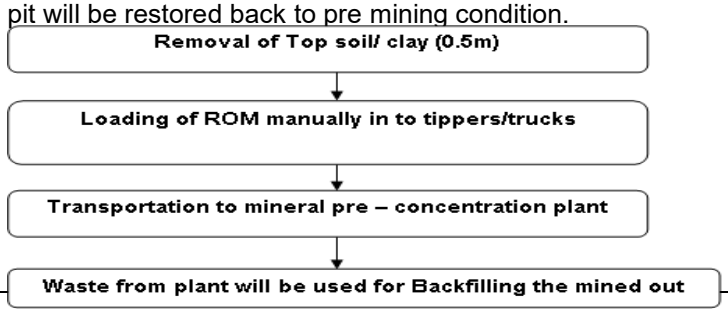
Nearest Airport	Tiruchirappalli – 40km – South
Accessibility	Leases are approachable from Kottathur road & Naduvalur Road which is connected to Turaiyur – Nakkasalem road (SH-142)
Topography	Plain land with the elevation in the range of 141m to 147m MSL.

S. No	Particulars	G.O.Ms.No.43	G.O.Ms.No.69	G.O.Ms.No.70	G.O.Ms.No.71	G.O.Ms.No.57
D. Environmental Setting of the Study Area						
1	Sattanur RF	1.1 km – SW,	830m-SW	450m-SW	800m-SW	455m-SW
	Ragalavadi RF	4.0 km – SW,	4.4km, SW	3.8km, SW	3.9km, SW	4.1km, SW
	Kottatur RF	1.7 km – NE,	1.4km, NE	2.0km, NE	2.4km, NE	1.8km, NE
	Pulivalam RF	7.6 km – SW	7.5km, SW	7.0km, SW	7.3km, SW	7.2km, SW
	Omandur RF	5.7 km – S,	5.2km, S	5.1km, S	4.2km, S	4.8km, S
	Vellakkalpat RF	5.8 km – SE,	5.2 km, SE,	5.2 km, SE,	5.5 km, SE,	5.0 km, SE,
	Edumalai RF	7.3 km SE,	6.7km, SE	7.2km, SE	7.4km, SE	6.9km, SE
	Kurichi malai RF	4.5 km – NW,	5.1 km,NW,	5.1 km,NW,	4.9 km,NW,	5.2km,NW,
	Palamalai RF	8.7 km – N	8.9 km, N	9.3km, N	9.0km, N	9.1km, N
	Nakkasalem RF	7.3 km - NE	7.5 km,NE	7.9 km,NE	7.8 km,NE	7.8 km,NE
2	Other Industries in the study area	Ink Factory, stone quarries, Solar power industry, Poultry farm etc are found in the buffer zone.				
3	Nearest major water bodies	Uppar river – 1.1 km – SE, Gundar – 9.3 km - W	Uppar river – 900 m – SE, Gundar – 9.7 km – W	Uppar river – 1.4km – SE, Gundar – 9.1 km - W	Uppar river – 1.3km – SE, Gundar Nadi – 9.5km - W	Uppar river – 1.4km – SE, Gundar – 9.5 km - W
4	Seismic zone	Area falls in Zone-II (Least Active)				
5	Nearest villages	Kottathur - 650m – E Puthanampatti – 4.5 km – SE Abinimangalam – 4.4 km – S Thinnanur – 8.6 km - SW	Kottathur – 580 m – NE Puthanampatti – 4.2 km – SE Abinimangalam – 3.8 km – S Thinnanur – 6.4 km - SW	Kottathur - 216m – NE Puthanampatti – 4.2 km – SE Abinimangalam – 3.7 km – S Thinnanur – 6.1 km - SW	Kottathur - 800m – NE Puthanampatti – 4.5 km – SE Abinimangalam – 4.4 km – S Thinnanur – 8.6 km - SW	Kottathur - 375m – NE Puthanampatti – 3.6 km – SE Abinimangalam – 1.3 km – W Thinnanur – 6.0 km - SW
6	Defence installations	Nil within 10 km radius				
7	Notified Archaeologically important places, Monuments	Nil within 10 km radius				

S. No	Particulars	G.O.Ms.No.43	G.O.Ms.No.69	G.O.Ms.No.70	G.O.Ms.No.71	G.O.Ms.No.57
8	Local Places of Historical and Tourism Interest	Nil within 10 km radius				
9	Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Nil within 10 km radius				

2.2 TECHNICAL DESCRIPTION:

sl no	Particulars	G.O.43	G.O.69	G.O.70	G.O.71	G.O.57
1	Extent in Ha	4.75.5	4.90.0	4.75.0	4.80.0	4.75.0
2	Type of land	Eri poramboke land				
4a	Total mineable ROM Reserves (T)	28800	20736	29700	42048	36000
4b	Garnet Reserves @ 10% recovery	2880	2074	2970	4205	3600
5a	Peak Production capacity ROM in Tonnes per annum	9000	6912	9750	13814	10800
5b	Garnet production at 10% recovery in Tonnes per annum	900	691	975	1381	1080
6	**Method of mining:** Opencast manual mining method using spades axes & baskets, loading it in to trucks/tippers and transportation. No drilling and blasting involved. Initially, top clayey soil will be removed and dumped temporarily in the earmarked dump site based on the requirement and later spread over backfilled area for reclamation purposes. Mined garnet rich stream sediments (ROM) will be transported to the pre-concentration plant for separation of garnet sand. The waste/mineral reject generated in the plant will be brought back and backfilled in the mined out void. Top soil will be spread over the backfilled area and the mined out pit will be restored back to pre mining condition.					



7	Ultimate mine depth	2m	2m	2m	2m	2m
8	Waste Generation & management	Since the recovery of ROM is expected to be 10%, the balance 90% reject from the processing plant will be transported back and backfilled in the mined out area. Top soil will be spread over the backfilled area and the mined out pit will be restored back to primining condition.				
9	Grade of Ore	SiO2 – 34% to 38%				
10	Ore end use	Garnet is used as abrasive material in various applications.				
11	Lease period	All the 5 leases are valid upto 05.04.2038.				
12	Project cost (Rs in lakhs)	10.0 Lakhs	10.0 Lakhs	10.0 Lakhs	10.0 Lakhs	10.0 Lakhs

SLNO	**Particulars**	**G.O.43**	**G.O.69**	**G.O.70**	**G.O.71**	**G.O.57**
Project Requirements						
Manpower		The total manpower for all the 5 leases will be about 50 people including common statutory manpower. Besides, scores of people will benefit through allied services like trading, logistics, casual labors or needs, plant operation etc.				
Water Requirement and Source		Total water requirement for all the 5 leases – 8cu.m, Domestic – 2.0cu.m, Dust suppression and Afforestation – 6.0 cu.m. Required water will be procured from outside.				
Power Requirement		No electricity needed for mining operation. The minimum power requirement for office, etc will be met from state grid.				
Site Services		Common site services (for all 5 leases) like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.				

3.1 EXISTING ENVIRONMENTAL SCENARIO:

The studies and data collection have been carried out systematically and meticulously as per relevant IS codes, CPCB and MoEF&CC guidelines and as per approved ToR during **Post monsoon Season 2024 (October 2024 to December 2024)** For the purpose of this study, the area has been divided into two zones, namely, core and buffer zones. The combined lease area is considered to be the core zone while the buffer zone encompasses a 10km from the periphery of core zone consists of 34 rural villages from four Taluks namely Musiri Taluk, Manachanallur Taluk and Thuraiyur Taluk of Trichy district & Kunnam Taluk from Perambaur District. The study details based on 2011 census data are highlighted below:

3.2 DEMOGRAPHIC PROFILE OF THE STUDY AREA

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	59599	49.66
Female Population	60426	50.34
Total	**120025**	**100**
B. Caste-wise population distribution		
Scheduled Caste	28870	24.05
Scheduled Tribes	500	0.42
Other	90655	75.53
Total	**120025**	**100**
C. Literate and Illiterate population		
Literate Males	44993	37.48
Literate Females	37538	31.28
Total Literate Population	**82531**	**68.76**
Others Males	14606	12.17
Others Females	22888	19.07
Others Population	**37494**	**31.24**
Total	**221595**	**100**
D. Occupational structure		
Main workers	59712	49.75
Marginal workers	6222	5.18
Total Workers	**65934**	**54.93**
Total Non-workers	**54091**	**45.07**
Total	**221595**	**100**

Further developments in this area with respect to these various facilities has occurred over the years

3.3 EXISTING ENVIRONMENTAL QUALITY:

3.3.1 BASELINE DATA:

A. Ambient Air Quality Data – 5 Locations			
Parameters	**Core Zone**	**Buffer Zone**	**Limits**
Particulate Matter (Size <10 µm)	42.4-52.1	41.1-60.1	100
Particulate Matter (Size <2.5 µm)	19.5-24.0	18.6-27.6	60
Sulphur Dioxide (as SO_2)	4.6-6.9	4.4-7.8	80
Nitrogen Dioxide (as NO_2)	7.5-9.8	7.2-11.2	80
Conclusion: The existing Ambient Air Quality levels for PM10, PM2.5, SO2 and NO2, are within the NAAQ standards prescribed CPCB limits. The CO values in all the locations were found to be below detectable limit. Silica values in the study area are found to be below detectable limit. (Detection limit – 0.05 mg/m3)			
B. Water Quality – 5 Locations			
pH at 25 ˚C	6.97 - 7.58	**6.5-8.5**	
Total Dissolved Solids, mg/L	440 - 930	**2000**	

Chloride as Cl-, mg/L	94.5 – 415	**1000**
Total Hardness (as CaCO3), mg/L	278-582	**600**
Total Alkalinity (as CaCO3), mg/L	115-509	**600**
Sulphates as SO42-, mg/L	12.6-114	**400**
Iron as Fe, mg/L	0.04 – 0.09	**0.3**
Nitrate as NO3, mg/L	1.68 – 3.05	**45**
Fluoride as F, mg/L	0.32 – 0.56	**1.5**
Conclusion: The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications.		

C. Noise Levels – 5 Locations

Parameter	Core Zone	Buffer Zone	Limit
Day Equivalent	47.4	48.1 – 51.4	55
Night Equivalent	39.4	39.3 – 40.5	45
Comparing with the MOEF&CC Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels were within the limit values for Residential areas.			

D. Soil Quality – 5 Locations

Parameter	Core Zone	Buffer Zone
pH	7.19	6.65-6.92
Electrical Conductivity (µmho/cm)	35.97	70.43-110.2
Organic matter (%)	0.56	0.64-1.25
Total Nitrogen (mg/kg)	136	176-522
Phosphorus (mg/kg)	1.12	0.86-0.98
Sodium (mg/kg)	872	860-1032
Potassium (mg/kg)	760	715-1172
Soil is of clay loam type.		

3.4 LAND ENVIRONMENT:

Land use pattern study carried out through remote sensing satellite data around the 10km buffer zone shows that 37.45 % of the buffer area is fallow land followed by 34.14 % classified under the Agriculture/ Plantation followed by, 5.12 % constitutes land with scrub and the balance 23.29 % falls under other land use categories

3.5 BIOLOGICAL ENVIRONMENT:

Flora: The lease area is a Eri poramboke land with thorny bushes (Prosophis juliflora), grasses and shrubs only.Buffer Zone comprise of Seasonal Agricultural land, waste land/barren land & Numerous RF's, Agricultural activities are carried out along the streams / ponds and wherever irrigational facilities area available. RFs in the study area, is mostly of scrubby type with plantation under social forestry scheme developed by Forest Department in most of the RF. Besides, Agave,

Accacia Sp., Prosophis, and shrubs are present in these RF. Only common floristic species are found in the study area.

Fauna: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals, are commonly found. From the study it observed that the area in general consists of species of least concern only. No threatened or endemic or endangered species are observed. The area does not form the migratory path of the birds also.

3.6 HYDROLOGICAL STUDY:

Leases are situated in Government Eri poramboke land (SF no 390(P)). Rainwater from the upstream side originating near the lease area on the north west side and northern side during the monsoon season flows through this eri. Due to elevation difference, this water drains immediately on the down stream south eastern side and further connected to Uppuodai . This eri acts more of a passage of rainwater. Besides, due to less water holding nature and good soil impermeability this eri remains dry for most of the year. Since only shall depth of manual mining will be carried out during non monsoon days, with proper runoff management measures, the drainage of the down stream side can be ensured.

4.1 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:

The identified impacts due to these mines during mining and associated activities have been studied in relation to various environmental components like Air, water, noise, vibration, land, transport etc.

4.2 AIR ENVIRONMENT:

In case of these mines , the dust or gaseous emission and subsequent impact on air quality is expected to be insignificant due to the following reasons:

- Depth of mining is 2.00 m only (0.50m Top clayey soil + 1.50m ROM Garnet)
- Material is soft and as such no drilling & blasting is involved
- Simple manual system of mining using spades axes & baskets will be the excavation method.
- Total production from all the 5 leases is very less and as such there will be hardly 7 trips /hour of ROM material transportation to the processing plant is involved . The waste

material from the plant after recovery of garnet will be transported back in the same vehicle avoiding additional transportation.

- The waste material will be simultaneously re-casted back into the mined out void
- Due to adoption of manual mining and less production, Less fleet of equipment's only is involved as such Gaseous emissions will be negligible.

Even for controlling the small scale pollution due to road transportation , the following mitigative measures will be ensured:

- ✓ Regular wetting of transport road using mobile water tanker
- ✓ Proper maintenance of road
- ✓ Avoiding overloading of vehicles
- ✓ Covering of loaded vehicles with tarpaulins to avoid spillage during transportation
- ✓ Proper maintenance of transport vehicles to keep the gas emission under check

The impact on air quality due to the proposed project is estimated using AERMOD View Gaussian Plume Air Dispersion Model developed by Lakes Environmental Software which is based on steady state Gaussian plume dispersion. Ground Level Concentration (GLC).

The cumulative post project concentration with respect to PM10 is in the range of 52.4 μg/m3 to 61.1 μg/m3 and with respect to PM2.5 are in the range of 24.2μg/m3 to 28.6 μg/m3 which are within the statutory limits in each case.

For preservation of environment in this mine strict enforcement of management schemes will be undertaken for taking corrective actions, as needed. By adopting the effective implementation of all the mitigative measures, no adverse impact on Air quality due to the mining operations in these leases are expected.

4.3 WATER ENVIRONMENT:

This being a manual mining in Eri poramboke land for a depth of 2m only in non monsoon dry period, the activity will be more of a desilting work and there will not be any significant impact on the water environment. There will not be any effluent generation or alteration in drainage course or intersection of ground water table or affecting of ground water regime.

Planting vegetation, including trees, along water body edges/bunds and in surrounding areas will be carried out to stabilize soil, reduce erosion, and provide natural filtration. Though mining will

be carried out in non monsoon days and no water is expected to be present in the area, it is proposed to construct peripheral drain in the overall lease area on the north west, north side to SE corner to ensure free flow of water if any for the downstream users. By this way no impact on the surface water flow is expected. Mining in this eri will be more of desilting work and it is expected to augment the water holding capacity of the tank further

4.4 NOISE ENVIRONMENT:

Since manual mining of mineral without drilling & blasting is proposed in these leases, apart from movement of few mineral transport vehicles , there are no noise generating source or activity is involved. As such no major noise generation is envisaged.

By following mitigative measures for noise control, the impact on noise levels will be insignificant:

- Planting rows of native trees along roads, around eri and other nearby areas to act as acoustic barriers.
- Sound proof operator's cabin for mineral transport vehicles/ tippers.
- Proper and regular maintenance of equipments may lead to less noise generation.
- Providing in-built mechanism for reducing sound emissions.

4.4.1 VIBRATION:

There will not be any drilling and blasting operation involved in the mining operation. Hence, vibration due to blasting is not envisaged.

4.5 IMPACT ON LAND ENVIRONMENT:

Out of 2.00 m of depth of mining , since the mineral recovery is just 10% of the ROM material removed, the entire 0.50m Top clayey soil + 90% of the reject material will be used for backfilling the mined out area and ultimately the entire lease area will brough back to premining condition. As such no adverse impact on land environment is expected.

4.6 BIOLOGICAL ENVIRONMENT:

The leases are in Eri poramboke land which is mostly barren with grasses & thorny shrubs only. As such no major clearance of vegetation is involved.

Since simple shallow manual mining will be carried out no adverse impact on Ambient air quality is envisaged. Necessary mitigative measures like dust suppression, proper maintenance of

equipment's, roads will be carried out to prevent dust generation and impact on the surrounding environ. More than 1000 trees will be planted in the peripheral eri bund, approach road from the eri periphery to the proposed beneficiation plant area, community plantation in the available lands in the nearby villages in consultation with the local heads and Government officials.

4.7 SOCIO ECONOMIC ENVIRONMENT:

Since the lease area is Government land no rehabilitation or resettlement is involved. Total manpower requirement for all the 5 leases will be about 50 people including common statutory manpower.. Besides, on indirect basis through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service related activities connected with the project operations

Towards the socio-economic development of the surrounding area, , the proponent has earmarked totally an amount of Rs.10 Lakhs for all the 5 leases together under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner in provision of desired facilities in nearby Government Schools.

4.8 OCCUPATIONAL HEALTH AND SAFETY ASPECTS:

In order to ensure minimisation of occupational health and safety problems in the project operation, the following preventive remedial measures will be effectively exercised in the project operations, so as to comply with applicable standards.

- Medical examination of workers at pre-entry level stage of workers, etc., by qualified doctors, with periodical examination of all workers/staff at least once a year, as per DGMS circulars.
- Regular awareness campaigns amongst staff and workers
- Staff exposed to excess noise levels, Dust generation if any will be provided with PPE's.

4.9 IMPACT ON LOCAL LOGISTICAL SYSTEM DUE TO PROJECT:

Entire ROM from the mines will be transported to the proponents nearby Beneficiation plant by tractor / trucks. The reject material will be transported back to the mine pit and used for backfilling the mined out voids.

Overall, there will be about7 trips per hour cumulatively. The existing road can absorb this traffic due to this project. The following mitigative measures are suggested for mitigation of adverse impacts on the logistical aspect of the project:

- Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- Plantation on either side of the transport road in consultation with the concerned department.
- Proper maintenance of transport roads and vehicles
- Avoiding overloading of material
- Covering of loaded vehicles with tarpaulins sheet if warranted.
- Provision of tyre washing facility at the mine outlet

4.10 WASTE MANAGEMENT:

There is no process effluent generation from both mines. Hence no liquid waste is generated. ROM Material is inert and non hazardous comprising (10% garnet and 90% silica, clay and silt). Garnet is separated by magnetic separation without any chemical process. Remaining non hazardous and inert ROM will be backfilled. As such no hazardous material is involved.

Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.

5.1 ENVIRONMENTAL MONITORING PROGRAMME:

The monitoring schedules are planned for systematic study of various pollution levels with respect to air and water qualities, noise levels, etc. to ensure that they conform to the standards laid down by Environmental Protection Act and various statutory Limits.

Towards EMP measures, Rs.11.48 lakhs is allocated under capital cost. Besides, Rs.3.46 lakhs per annum will be spent under recurring cost. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue.

6.1 CUMULATIVE IMPACT:

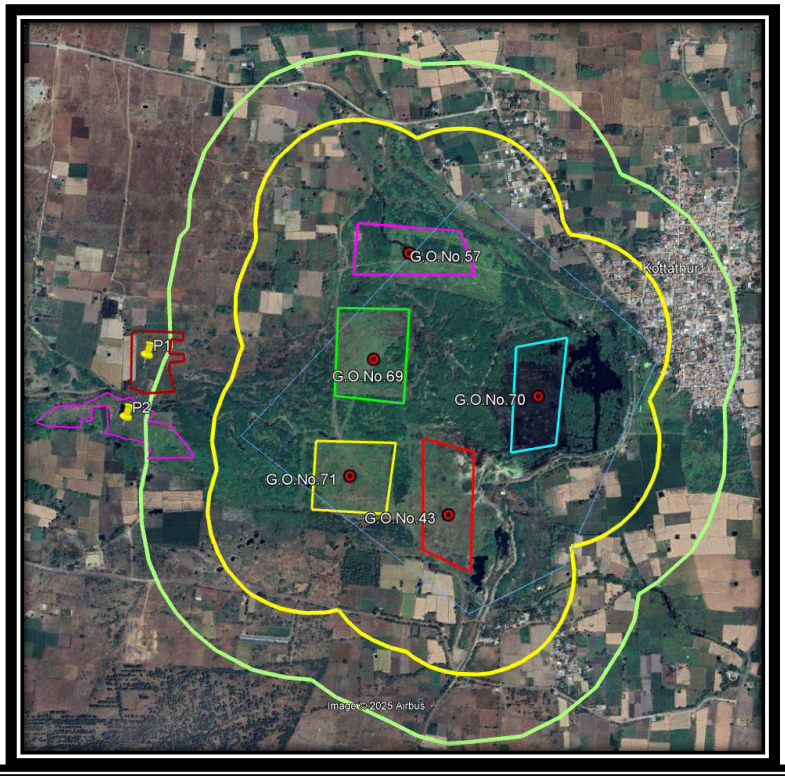
Combined impact of 5 leases in the eri poramboke land are already described above. Apart from these 5 leases, there are 2 more leases of the proponent within 500m radius which are located in patta lands owned bythe applicant.

Details of all the 7 leases in the cluster are as follows:

LIST OF QUARRIES WITHIN 500 METER RADIUS

S.No	Name of lease	Location	Extent in Ha
1	GO 43	S.F.No.390(P) – Eri poramboke land, Kottathur village, Musiri taluk, Trichy district, Tamil Nadu.	4.75.5
2	GO 69		4.90.0
3	GO 70		4.75.0
4	GO 71		4.80.0
5	GO 57		4.75.0
6	P1	S.F. No – Patta Land 95/2A, 2B, 4B, 4C, 5A, 5B, 6A, 6B, 97/2B & 2E, Kottathur village	2.10.0
7	P2	S.F. No- 137/7, 348/1A, 1B, 1C1, 1C2, 1C3, 2B1, 3A, 4, 5, 6B, 7A, 8, 9, 11, 12 & 13 – Patta Land Naduvalur Village	3.07.0
		TOTAL CLUSTER EXTENT*	29.12.50

Its location are given below:



Since in all the leases manual shallow depth mining with using spades, axes & baskets, loading it in to trucks/tippers for transportation without drilling and blasting will be carried out,the cumulative production involved is also very low, by effective implementation of all the mitigative measures given in the EIA/ EMP report , no significant impact on the surrounding environ is expected on cumulative basis also.

7.1 CONCLUSION:

Simple shallow depth manual mining with less production is expected not to cause significant impact on the surrounding environ due to effective implementation of above said well planned Environmental Management Plan. The environmental management strategy as explained above will prove that industrial growth, if properly planned with all environmental concerns and appropriate remedial measures can go a long way to improve life pattern and living conditions of the local community around the project in the fields of potential employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education facilities, etc. in its own way and also revenue to Government through royalty, taxes etc.

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